



INDIANA DEPARTMENT OF TRANSPORTATION

INTER-DEPARTMENT COMMUNICATION

Standards Section C Room N642



Writer's Direct Line

232-6775

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DESIGN MEMORANDUM NO. 01-09
TECHNICAL ADVISORY

TO: All Design, Operations, and District Personnel, and
Consultants

FROM: /s/ Anthony Uremovich
Anthony L. Uremovich
Acting Design Policy Engineer
Contracts and Construction Division

SUBJECT: Construction Zone Energy Absorbing Terminal

EFFECTIVE: October 16, 2001, Letting

SUPERSEDES: Design Memorandum 01-08 Technical Advisory

The use of the construction zone energy absorbing terminal will now be based on National Cooperative Highway Research Program Report 350 Test Levels. The Test Level 3 (TL-3) terminal should be specified for all Interstate and other routes with a construction zone speed limit in excess of 45 mph. The TL-2 terminal should be specified for all non-interstate routes with a construction zone speed limit of 45 mph or lower. If a lower temporary worksite speed limit is to occasionally apply, all terminals' Test Levels should still correspond to those for the construction zone speed limit. Locations of terminals with their Test Levels should be shown on the traffic maintenance plan.

The new pay item code numbers and descriptions are as follows:

601-07023	Energy Absorbing Terminal, CZ, TL-2
601-07024	Energy Absorbing Terminal, CZ, TL-3

Recurring special provision 601-R-016 has been revised accordingly with a date of 6-07-01 and is attached hereto.

CONSTRUCTION ZONE ENERGY ABSORBING TERMINAL, CZ

DESCRIPTION. This work shall consist of furnishing, assembling as required, and installing the construction zone energy absorbing terminal, cz in accordance with the manufacturer's recommendations and section 105.03.

MATERIALS. The construction zone energy absorbing terminal, cz shall have passed NCHRP 350 level 3 crash tests for all Interstate and other construction sites having a construction zone speed limit in excess of 45 mph, and level 2 for non-Interstate construction sites having a construction zone speed limit of 45 mph or less. All energy absorbing terminal, cz's shall be approved by the FHWA. A copy of the crash test results and a copy of the FHWA approval letter shall be furnished to the Engineer prior to the installation of the unit. The Contractor may also use the Guard Rail Energy Absorbing Terminal cz, manufactured by Energy Absorption Systems, Inc.

The unit's nose cover shall be reflectorized as shown on the plans.

CONSTRUCTION REQUIREMENTS. Assembly and installation shall be supervised or performed at all times by an installer trained and certified by the unit's manufacturer. The size, assembly, and installation shall be in accordance with the manufacturer's recommendations at the locations shown on the plans. When required for bi-directional traffic protection, transition panels and all other necessary hardware shall be included in the installation. A copy of the installer's certificate shall be provided to the Engineer prior to the start of work.

The Contractor shall provide the Department with original copies of all necessary current manufacturer's installation manuals and shop drawings prior to beginning installation work. Shop drawings shall be a minimum of 560 x 865 mm (22 x 34 in.) in size. No installation work shall begin prior to the Department's receipt of such manuals and drawings. Such manuals and drawings will remain the property of the Department. If there is a discrepancy between shop drawings and the plans, the shop drawings shall govern.

Sufficient spare parts or complete units shall be stored in a safe, convenient, nearby location. Such standby materials are not shown in the Schedule of Pay Items. The standby materials shall be utilized to repair or replace damaged units in the shortest time possible. Complete standby units shall only be used when the damaged unit is deemed non-repairable. Standby materials used in the repair of damaged units shall be replaced within 24 h of their use.

METHOD OF MEASUREMENT. This work will be measured by the number of terminals placed.

BASIS OF PAYMENT. This work will be paid for at the contract unit price per each for energy absorbing terminal, cz, of the test level placed. Each unit will be paid for only once regardless of how many times it is moved.

Payment will be made under:

Pay Item	Pay Unit Symbol
Energy Absorbing Terminal, CZ, TL-_____EACH
Test Level	

The cost of all materials, equipment, labor, and incidentals necessary to install, maintain, repair, or replace, if necessary, and to remove the unit shall be included in the cost of energy absorbing terminal, cz. The cost of stockpiling standby terminals and terminal materials, whether incorporated into the work or not, shall be included in the cost of energy absorbing terminal, cz. Back-up units, even if placed in service, will not be paid for. All units shall remain the property of the Contractor upon completion of the contract.
